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SUMMARY

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THE EVOLUTION OF SOIL SCIENCE AND ITS APPLICATION TO HUMAN PROGRESS

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THE EVOLUTION OF SOIL SCIENCE AND ITS APPLICATION TO HUMAN PROGRESS

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1. Human progress is slow as long as people must devote a high proportion of their time to producing enough food to feed themselves. The amount of time required depends upon the qualities of the environment and the skill with which it is managed. The labor required for food production is usually high when crop yields are low. Crops yields are higher when the natural environment is favorable or when it can be made favorable by skilled management. An understanding of the principles of soil and crop science is essential to the development of the sound management practices necessary to obtain higher yields.

2. Soil scientists are confident that the world has the soil and water resources necessary to produce an adequate diet for all the peoples of the world for at least a couple of generations, if they are properly developed and managed. The experience of Mexico, Taiwan and many other countries indicates that it is now possible to expand food production at rates from 5 to 8 percent per year. This is about twice the rate at which populations normally increase. Most of the broad scientific knowledge necessary is already available. The additional information needed on local environments can be obtained within a decade or less. There are, however, other requirements which must be met if we are to put this knowledge to work.

3. The efficient development and use of these resources will require: (a) increased sources of power and the machines necessary to use it, (b) increased supplies of fertilizers and lime, (c) increased supplies of chemicals for pest control, (d) better seeds, with greater genetic potential for utilizing the improved environment, (e) better water control; drainage to remove harmful surpluses and irrigation to supplement deficiencies in rainfall.

4. The amount of capital required for these developments is large. Fortunately, most of these expenditures, if wisely made, can be self liquidating. The more highly developed countries have found that such investments are very profitable. They should be autocatalytic in their effect on the economy of the country. If wisely handled, it will cost much less to make the necessary investments than to fail to make them. The advanced countries have made them and are now reaping the benefits, the less developed countries have not and are suffering as a result.

5. Progress in a country is more frequently limited by the attitudes, motivation and capabilities of its people than by all other factors. In many of the less developed countries people of wealth and in positions of great power are preoccupied with maintaining status quo. Usually this attitude is shortsighted in that it fails to recognize new outlets for their talents and resources and tends

to inhibit their over-all economic and social progress so important to all elements of the population.

6. In this scientific age, the development of a country is more likely to be limited by its supply of educated people than by any other factor. An investment in the education of its people is one of the most profitable that a country can make. Unless it is made, the returns from all other investments will be jeopardized or at least reduced. Modern agriculture and industry cannot be directed and operated efficiently by uneducated men. The proportion of highly trained men required is steadily increasing. To produce the numbers of educated men needed, teachers, schools and universities, and time are needed. Until local personnel can be educated to the required level, and in sufficient numbers, leadership from other countries should be recruited.

7. The experiences of several countries in the tropics and that of a few exceptionally skilled farmers in most other countries, seem to justify our faith that farmers in practically all countries can produce enough food and other agricultural products to meet the basic needs of their people. If they are to do so, however, the soil and other resources of the country must be wisely developed and managed. Efforts to ensure this should receive top priority in all countries.

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